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## GLUCOSE : NITRATE RATIO (1)

As was mentioned in the previous Monthly Report, the sugar to nitrate ratio, that was determined to be 36.9, could be lowered to 25.8, without adversively affecting the denitration. This trial was repeated, using only phosphoric acid to maintain the pH, in order to avoid an organic acid being used as a carbon source. The result could be confirmed. This means that 30% less sugar is necessary to denitrate totally this particular stem extract. Trials are currently being carried out in order to determine the reason for this reduced glucose consumption.

To do this two main parameters are being checked :

1. Dilution rate : The previous glucose : nitrate ratio of 36.9 was determined at a dilution rate of 0.1 $hr^{-1}$ and the new results were determined at a rate of 0.22 $hr^{-1}$.

2. Nitrate concentration. The previous extract had a nitrate nitrogen concentration of between 1000 and 1500 ppm, whereas the new results were obtained with an extract of 500 ppm.

## STRIP-EXTRACT DENITRATION (2)

Some problems were encountered with the denitration of strip-extract at higher dilution rates (3,4). A special characteristic of a strip extract is that nitrate- and ammonia-nitrogen are present in about the same quantity.

In order to determine whether the two different nitrogen sources affect the dilution rate and thus the efficiency of the process, a continuous denitration was carried out using a synthetic medium (1% yeast extract without amino-acids and ammonium sulfate and 4% glucose) with equal amounts of ammonia and nitrate nitrogen (540 ppm each).

No problems were encountered up to a dilution rate of 0.28 $hr^{-1}$. It may be concluded that the problems with strip-extract are most probably not due to the presence of ammonia.

At the present time tests are under way in order to determine the influence of the strip extraction temperature on the denitration of strip-extract.

REFERENCES


(1) Berney-J., Notebook 800802

(2) Hofer-M., Notebook 810302

(3) Schulthess-D., Monthly Report, Biotechnology February 1981.

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